



A Hands-On Approach for Exploring Textiles and Daylight in Architecture

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A Hands-on Approach for Exploring Textiles and Daylight in Architecture

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RESEARCH QUESTION:

How can the making of models make architecture students explore and develop architectural concepts that include textiles?

METHOD OF INQUIRY:

In two workshops at the University of Technology Sydney (UTS), textiles’ lighting and spatial possibilities were explored through the making of three-dimensional architectural models by hand. The students, all ‘textile novices’ experimented with two tools for three-dimensional sketching consisting of model making materials. This approach is supported by earlier work by Gutierrez and Popovic (2005) exploring small-scale textile membranes in similar workshops.

Reference: Gutierrez, E. & Popovic Larsen, O. 2005, “The Potential for Wider Application of Small Scale Low-Tech Membranes Explored Through Interactive Workshops”, *International Journal of Space Structures*, vol. 20, no. 4, pp. 225-234.

WORKSHOP 1

14 SECOND YEAR ARCHITECTURE STUDENTS

4 GROUPS OF 3 OR 4 STUDENTS

EXTERIOR BUILDING SKIN



- Cardboard “corner”
- Wire
- Textile
- Scissors
- Cutters
- Stapler

OPEN

Make a mock-up of a building skin for the UTS Tower Building



MATERIALIZE



ILLUSTRATE



DEVELOP

PARTICIPATION IN DESIGN CRITIQUE

VIDEO AND PHOTOGRAPHS

PARTICIPANTS

GROUPS

OBJECT OF DESIGN

MATERIALS & TOOLS

TASK

PROCESS

RESULT

FOLLOW-UP

DOCUMENTATION

CONCLUSIONS

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Three material strategies were indentified: the materials were either used to *materialize*, to *illustrate* or to *develop* a concept. The tool’s openness seemed to be a limitation, resulting in a somewhat shallow exploration of textiles’ effect on daylight regulation.

We argue that this type of tangible modelling makes it more likely that textiles will be used in the final design and contributes to bridging the gap between the model and the final building.

WORKSHOP 2

11 THIRD AND FOURTH YEAR SPATIAL DESIGN STUDENTS

4 GROUPS OF 2, 3 OR 4 STUDENTS

TEXTILES FOR INTERIOR SPACES

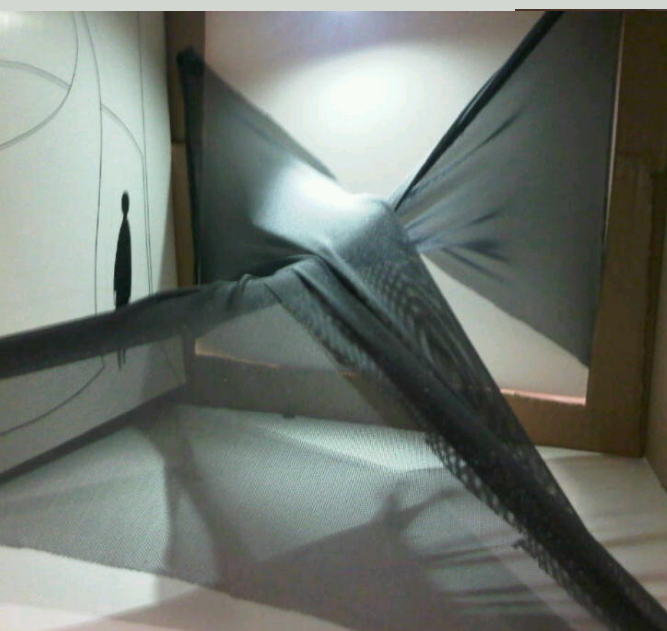


- Cardboard “room”
- Foamboard in ceiling and on floor
- Textile
- Pins
- Scissors



CONSTRAINTS AND CONTROLLED PROGRESSION

Included a cardboard ‘room’, a scenario, three pieces of translucent textile and restrictions as to what to do with these materials. The restrictions were gradually loosened.



INTERVIEW WITH TEACHER AND ARCHITECT NICOLE GARDNER

VIDEO AND PHOTOGRAPHS

Contrasting workshop 1’s openness, the restrictions in workshop 2 resulted in better and more solutions showing a deeper exploration of textiles’ possibilities for daylight regulation.

The interviewed architect argued that the tools would be suitable in professional practice where they could be used early in the design process, as a way of literally sketching with textiles to expand one’s material repertoire.